

REMARKS

The Applicants have carefully considered the Office Action dated October 17, 2008. In response, the Applicants present the foregoing amended claims. Based on the amendments and the remarks that follow, reconsideration of the patentability of the claims is respectfully requested.

Preliminarily, it is noted that the independent claims of the application (1, 6, 13, and 14) are amended to include the subject matter of dependent claims 4, 11, and 20, respectively. That is, each independent claim includes the limitation of fermenting a fibrous by-product or residue whereby a dry matter content of the by-product or residue decreases by from about 7% to about 12%, a protein content of the by-product or residue increases by from about 10% to about 15%, and a fat content of the by-product or residue decreases by from about 40% to about 50%. That subject matter having been presented previously in dependent claim form in the application as filed, no new matter is created.

Initially, the Examiner rejects claims 14-21 under 35 U.S.C. §112, 2d paragraph. The Examiner considers that the term "suitable carrier" as used in claim 14 renders the claims indefinite. In response, it is the Applicant's position that the skilled artisan in this field, that is, animal feeds, feed supplements, and feeding practices, readily recognizes the scope of the term "suitable carrier" as used in the context of a disclosure relating to animal feeds, feed supplements, and the like. As evidence of this, the Examiner is directed to the attached **Exhibit A**, being an excerpt from the 1999 Official Publication of the Association of American Feed Control Officials, Inc. (AAFCO). As shown in the appended page 171 from that publication, at top, AAFCO recognizes the term "carrier" as referring to "[A]n edible material to which ingredients are added to facilitate uniform

incorporation of the latter into feeds.” To more clearly express this, claim 14 is amended to recite a “suitable feed-grade carrier.” It is believed that claim 14 and its progeny are perfectly definite, and reconsideration of the Section 112 rejection is respectfully requested.

Next, the Examiner rejects claims 1-21 under 35 U.S.C. §102(b) over U.S. Published Patent Appl. No. 2002/0037342 (the Labeille reference). The Examiner suggests that “[T]herefore, the decrease in dry matter and fat content and the increase in nitrogen content with an improved nutritional quality are all inherent in the fermentation process” (page 3, paragraph 6 of the 10/17/08 Action).

Respectfully, however, Labeille neither teaches nor provides an articulated reason for the skilled artisan to consider the subject matter of the present independent claims as amended, that is, the precise alterations in protein, fat, and dry matter content of the recited fibrous by-product or residue. As recited above, the present independent claims are directed to a reduction in dry matter of from about 7-12%, an increase in protein of from about 10-15%, and a decrease in fat of from about 40-50% in the fibrous by-product or residue. Nowhere does Labeille teach these proportions, certainly not in an enabling manner. Even more, the skilled artisan is provided no articulated reason for considering these proportions by any teaching of Labeille.

Turning to the cited reference, Labeille teaches a multi-enzyme product, and a method for making it, comprising glucoamylase at a concentration of at least 100 GU/g DM, protease in the amount of at least 100 PU/g DM, and xylanase at a concentration of at least 100 XU/g DM (*Abstract*). The enzyme product is preferably made by solid state fermentation of *A. niger* (st. NRRL 3112 or ATCC 76061) on wheat bran. The method of Labeille comprises heat treating wheat bran

to gelatinize the starch, inoculating the bran with the organism, adjusting moisture to 50-60% of total mass and maintaining the moisture level in this range ($\pm 5\%$), and fermenting. A 1-3 day fermentation is disclosed, using a 10 cm bran layer at 28-38 °C, with periodic stirring and aeration using moisture-saturated air. Particular uses disclosed for a product made by this method include a solid product which may be used as an additive for producing ethanol from wheat (the product having from 750-1500 GU/g DM; see Example 5), or an enzyme additive for a wheat-based feed for monogastric animals (having preferably 400 XU/g DM; see Example 6). Thus, it is the enzyme content that is the focus of the Labeille disclosure.

The present claims as amended, on the other hand, are directed to improving nutritional qualities of the fermentation product for subsequent use as an animal feed or feed supplement by a precise alteration in dry matter, protein, and fat content of the by-product substrate to render the material suitable as a value-added feed or feed additive. A number of by-products are set forth as suitable raw materials for the process (claim 7). In contrast, Labeille et al. are modifying a known SSF process to obtain maximal levels of specific enzymes (glucoamylase, protease, and/or xylanase) depending on the proposed use of the product (a product for use in ethanol fermentation would require maximum glucoamylase, while a product for use as a feed additive for monogastric animals would require maximal xylanase), all specifically from a wheat bran substrate. Thus, Labeille is focusing on the enzyme content left behind in wheat bran fermented by *A. niger*, not on any specific nutritional properties of the substrate itself after fermentation. *Contra* Labeille, the present disclosure sets forth and claims precisely the alterations in nutrients to be achieved in order to provide the presently recited improvement in nutritional quality and value of a by-product/residue.

Further (see paragraph 140), Labeille specifically notes a decrease in dry matter of approximately 23% during a 60 hour culture, which significantly exceeds the presently disclosed and claimed decrease in dry matter (about 7-12%). Labeille is silent on any alterations in protein or fat content of the substrate. For at least that reason, it cannot be said that Labeille anticipates the present independent claims as amended.

It is settled law that to support a rejection of a claim as anticipated by a prior art teaching, each and every element of the claim must be set forth in the prior art, expressly or inherently.¹ Even more, the Federal Circuit Court of Appeals has recently held that, in order to properly support a Section 102 rejection, a reference must disclose within the four corners of the document, ... “not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim...”² Labeille does not set forth each claimed limitation as set forth in amended independent claims 1, 6, 13, and 14, for at least the lack of any teaching or suggestion of the recited alterations in protein, fat, and dry matter in the fibrous by-product or residue. Rather, as discussed fully above, Labeille is silent on any alteration or lack thereof in fat and protein, and further teaches a significantly higher decrease in dry matter. Lacking at least these claimed limitations, Labeille cannot fairly be said to anticipate the claims of the present application under the “all elements” test of *Verdegaal* and *Richardson*. The claims depending from the independent claims incorporate all limitations of the claims from which they depend by reference, and are therefore also believed to

¹ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (“The identical invention must be shown in as complete a detail as is contained in the ... claim”).

² *Net Moneyin, Inc. v. Verisign, Inc.*, Fed. Cir. 2007-1565, Oct. 20, 2008 (Fed. Cir. 2008).

patentably define over any teaching of Labeille.

Even more, to anticipate a prior art reference must also enable the skilled artisan to make the invention.³ Stated differently, the prior art must enable the claimed invention.⁴ As discussed above, not only does Labeille not teach the limitations of the independent claims as amended, it expressly teaches a significantly higher reduction in dry matter (see *paragraph 0140* of Labeille). For at least that reason, Labeille cannot fairly be said to present an enabling disclosure of the presently claimed subject matter. Reconsideration of the anticipation rejection of the claims is believed to be merited.

With regard to any prospective consideration of obviousness of the amended independent claims over Labeille, it is an express requirement to support an obviousness rejection, despite any recent revisions to the Manual of Patent Examining Procedure, that the Examiner articulate a reason that the skilled artisan would contemplate making any modification to the reference to arrive at the subject matter of the claims under consideration.⁵ Lacking such reason, there is a risk that improper hindsight, potentially based on the teachings of an application under examination, is being used to justify the modification.

Labeille is silent on any issue of alteration in fat and protein, and expressly teaches a significantly higher reduction in dry matter. This is perhaps to be expected, since Labeille contemplates exclusively preparation of an enzymatic product having particular proportions of glucoamylase, protease, and/or xylanase, according to the intended use of the end enzyme product (*Abstract*). Given the enzyme focus of the Labeille disclosure, the skilled artisan is provided no

³ *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1336 (Fed. Cir. 2008) (citing *In re Omegrazole Patent Litig.*, 483 F.3d 1364, 1379 (Fed. Cir. 2007)).

⁴ *Minn. Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1301 (Fed. Cir. 2002).

⁵ *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007).

articulated reason to consider the particular alterations in protein, fat, and dry matter to improve nutritional properties of the by-product or residue as expressly claimed herein. Lacking any articulated reason to modify the prior art reference, any consideration of rejection of the amended independent claims of the present application over Labeille on obviousness grounds risks hindsight analysis. The remaining dependent claims of this application, incorporating by reference the limitations of the independent claims, are similarly believed to be in condition for allowance without consideration of obviousness in accordance with the teachings of *In re Fine*.⁶

It is believed that the foregoing amendments overcome the art and rejections of record, and properly place the remaining pending claims in condition for allowance. Accordingly, allowance of all remaining claims of the application and issuance of an early Notice of Allowance is respectfully requested. If any issues remain to be addressed, however, the Examiner is respectfully requested to contact the Applicants' attorney at the telephone number of record in order to expedite the prosecution of this patent application. *No fees are believed to be due in association with the present paper.* However, to the extent any unforeseen fees may be due, the Commissioner is authorized to deduct them from the undersigned's Deposit Account No. 11-0978.

Respectfully submitted,

KING & SCHICKLI, PLLC



Patrick M. Torre
Registration No. 55,684

247 North Broadway
Lexington, Kentucky 40507
(859) 252-0889

⁶ *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) (“Dependent claims are non-obvious under 35 USC 103 if the claims from which they depend are non-obvious.”).